Guide

for Principals and Teachers Administering the Grade 9 Assessment of Mathematics, Spring 2001

EQAO
Education Quality and Accountability Office

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Education
Quality and
Accountability
Office

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Introduction

The Education Quality and Accountability Office

The Education Quality and Accountability Office (EQAO) is an independent, arm's-length agency established by the Government of Ontario. Its purpose is to promote greater accountability and better quality in Ontario's publicly funded school system.

The role of EQAO is to

- ❑ design and implement a comprehensive program of student assessment within government-established guidelines;
- ❑ develop and implement a system for measuring the quality of education in Ontario;
- ❑ manage Ontario's participation in national and international assessments;
- ❑ promote research in best practices in assessment and accountability;
- ❑ conduct quality reviews in cooperation with school boards; and
- ❑ report to the Minister of Education, the public and the education community on system quality issues and recommend improvements.

Purpose of this Guide

This guide has been developed to help principals and teachers administer the Grade 9 Assessment of Mathematics. It is important that the steps describing what to do before, during and after the administration of the assessment be followed exactly as prescribed. Following these procedures will ensure that consistency is maintained across all classes in the province.

Development of the Assessment

EQAO developed the assessment in collaboration with teams of Ontario teachers, consultants, principals and university professors. These educators contributed their expertise in mathematics, their knowledge of *The Ontario Curriculum, Grades 9 and 10: Mathematics*, their experience with equity issues, their knowledge of students with special needs and their technical knowledge pertaining to validity and reliability.

EQAO's commitment to both accountability and improvement has led to the following criteria for the Grade 9 Assessment of Mathematics. The assessment must

- ❑ be of high quality to ensure that reliable information about student achievement is obtained;
- ❑ ask students to work independently to complete challenging tasks across the mathematics curriculum;
- ❑ give us a broad view of students' knowledge and skills in mathematics; and
- ❑ contribute to student learning.

Confidentiality and Security of Materials

Materials must be kept secure. Every principal, teacher and other staff assisting in the administration of the assessment must sign the *Confidentiality Agreement*. We ask that you keep all assessment materials strictly confidential by not photocopying or discussing the assessment materials with anyone.

All assessment materials must be returned to EQAO at the conclusion of the assessment.

Student Participation and Absences

All students enrolled in Grade 9 applied and academic mathematics classes in publicly funded schools must participate.

If students are absent during the assessment, teachers should have those students complete the assessment when they return, if this is possible within the prescribed time limits. On the *Class Tracking Sheet*, teachers are required to record the parts of the assessment that were not completed due to student absence.

If a student moves out of the school during the assessment, mark the student absent and return all materials to EQAO.

Classroom Assessment of Student Work

Teachers have the option of marking their own students' work on this assessment prior to submitting it to EQAO for centralized marking. This option provides teachers with an opportunity to obtain a sense of their students' proficiency and the evaluation may be used in calculating students' grades for the course (in compliance with Ministry of Education Report Card policies). EQAO recommends that attention be paid to the various components (multiple-choice, short answer and tasks), instead of marking one component only. Since a number of versions of *Booklet 4* will be administered to students in each class, do not include this booklet as a part of the classroom evaluation.

The marking methodology used is a teacher and/or school decision. No marks are to be placed on student booklets and student booklets must not be photocopied. All materials must be returned to EQAO by the return dates provided with the materials.

Accommodations, Special Provisions and Exemptions

The guide includes administrative procedures for accommodations for students with special needs, special provisions for students enrolled in English as a Second Language (ESL) or English Literacy Development (ELD) programs and for the exemption of students from participation in the assessment.

Students Studying Mathematics in French

Students in French Immersion and Extended French programs will participate in the English-language assessment. An English/French glossary of mathematical terms will be provided. (See Appendix G.)

Teacher Absences

Teachers who participated in the training should work through the entire assessment with the students. In the case of an unavoidable absence, another teacher, under the supervision of the principal, may administer the assessment.

Quality Assurance

As part of the Quality Assurance procedures established by EQAO, an observer representing EQAO may visit selected classes. The observer will notify the school by phone and will present a letter of identification to the principal.

The Quality Assurance staff are not present to judge teacher performance; they are there to observe the process of administration of the assessment. Individual boards, schools and teachers are not identified in their reports. The observer may ask to interview the principal and a teacher or teachers administering the assessment.

EQAO Policy on the Duty to Report Child Abuse

Students sometimes write about personal issues, including physical, emotional and sexual abuse. Under provincial law, professionals dealing with children, including teachers and school principals, have a duty to report suspicions of child abuse to the Children's Aid Society. According to the *Child and Family Services Act*, the duty to report also applies where there are reasonable grounds to suspect patterns of child neglect. These same duties to report, which are also addressed in school boards' child abuse prevention policies, apply to teachers and principals involved in administering EQAO assessment materials, administering the assessment or marking student work. If these and other professionals engaged in work for EQAO have reasonable grounds to suspect child abuse or neglect, they are obliged to report their suspicion and the information on which it is based directly to the Children's Aid Society. EQAO has procedures in place to facilitate reporting by teachers and principals during the marking process.

EQAO Policy on Offensive Language

EQAO values the welfare of students and encourages a positive attitude towards assessments. Student work that contains offensive language or graphic depictions that are obscene or racist will not be marked. The student's principal will be informed to determine appropriate action.

The Assessment at a Glance

The assessment must be administered within the period of May 28 to June 14, 2001. There are two options for the organization of the administration of the assessment. The decision as to which option to choose must be made on a whole-school/department basis. It is not acceptable for one class (applied or academic) completing the same assessment as another to follow a different administration schedule. Since there are different assessments for the two programs, there may be separate decisions for the applied and academic classes. The decision must be documented on the *Class Tracking Sheet*. The assessment components must be administered in the order that appears below.

Three-day Plan

Day One	
Booklet 1 (Multiple-Choice)	30 min
Booklet 2 Part I (Tasks)	40 min
Day Two	
Booklet 3 (Short Answer)	30 min
Booklet 2 Part II (Tasks)	40 min
Day Three	
Booklet 4	30 min

Five-day Plan

Day One	
Booklet 1 (Multiple-Choice)	30 min
Day Two	
Booklet 2 Part I (Tasks)	40 min
Day Three	
Booklet 3 (Short Answer)	30 min
Day Four	
Booklet 2 Part II (Tasks)	40 min
Day Five	
Booklet 4	30 min

Note: The times indicate student time on-task. Additional time will be required for distribution of materials and provision of instructions.

Components of the Grade 9 Assessment of Mathematics

All of the following components of the assessment must be completed by a student in order to provide the student with an *Individual Student Report*. If all components are not completed, there may be insufficient data on which to report.

Tasks

Students will complete three tasks per day over 40 min in each of two mathematics classes. Each task is a collection of related questions based on one or two strands. Each task will provide information on performance in one or more strands and in all four categories.

Short Answer Items

Students will solve 10 items over a 30-min time period. Each short answer item is related to a single strand and a single category. These questions will require students to think mathematically, but will require minimal written response.

Multiple-Choice Questions

Students will solve 24 questions over a 30-min time period. Each multiple-choice question is related to a single strand and a single category. These questions provide students with an opportunity to demonstrate their understanding without having to show their work. The questions will assess components of the curriculum that can be easily measured through the use of multiple-choice questions.

Additional Components

Students will also be asked to complete an additional 30-min component. Multiple versions of these additional booklets will be distributed in each class. They include items that will be used to establish comparability of assessments and items being piloted or field tested for future assessments or support materials. This component will not be included in student scores and should not be marked for classroom evaluation. *Booklet 4* will contain multiple-choice questions with a *Booklet 4 Student Answer Sheet*, short answer questions or tasks.

Investigations

In May 2001, the Investigations component will be field tested in a sample of schools. Scores will not be reported. In subsequent years, this component will be administered in all schools and included in student scores.

Roles and Responsibilities

The Board Contact

The board contact serves as the prime contact between EQAO and the schools within his or her jurisdiction.

The board contact is responsible for

- ❑ receiving and distributing mailings from EQAO;
- ❑ supporting the training and the administration of the assessment; and
- ❑ helping to solve problems that arise.

The Principal

The principal has the ultimate responsibility for ensuring the security and pre-test organization of the assessment materials and for supporting the teachers involved in the administration of the assessment. He or she also has the important role of ensuring that the assessment experience is a positive one within the school.

The principal is responsible for

- ❑ receiving all materials;
- ❑ ensuring that the correct materials for the applied and academic classes have been received;
- ❑ ensuring that all teachers administering the assessment are informed of the administrative procedures;
- ❑ ensuring the completion of the *Student Information Forms* and the *Class Tracking Sheets*;
- ❑ consulting with parents and teachers with respect to accommodations, special provisions and exemptions;
- ❑ ensuring that all teachers and support staff involved in the administration of the assessment sign the *Confidentiality Agreement*;
- ❑ supporting teachers in the distribution and organization of materials;
- ❑ establishing a positive atmosphere to encourage and support teachers and students;
- ❑ ensuring the required resources are available (e.g., scientific calculators);
- ❑ monitoring the administration of the assessment to ensure adherence to the required procedures, in the interest of consistency of administration;
- ❑ returning all assessment materials; and
- ❑ ensuring the security and confidentiality of all assessment materials.

The Teacher

The teacher is the essential link between the students and the assessment materials. The teacher's approach to the assessment will have a substantial influence on the students' attitudes as they work on the assessment.

The teacher is responsible for

- ensuring that the appropriate assessment materials have been received for each class;
- establishing a positive atmosphere for the assessment, so that students will feel supported and encouraged to do their best;
- reviewing the *Student Information Forms*;
- reviewing the *Class Tracking Sheets* and completing the attendance section of the *Class Tracking Sheets*;
- completing the *Teacher Questionnaire*;
- consulting with the principal and others with respect to accommodations, special provisions and exemptions;
- administering the assessment according to the required procedures;
- ensuring the confidentiality and security of the assessment materials;
- ensuring all *Student Bar-coded ID Numbers* are intact and legible (if a student defaces a bar code, the teacher must write the number very clearly under the bar code); and
- returning all assessment materials to the principal.

The first line of support for the teacher will be the principal. Teachers can also contact their board contact or the staff of EQAO at 1-888-327-7377.

Accommodations for Students with Special Needs

Definition of Terms

Students with special needs

"Students with special needs" are defined as students with an Individual Education Plan (IEP) who **may or may not** have been identified as "exceptional pupils" through the Identification, Placement and Review Committee (IPRC) process.

Accommodations

"Accommodations" are supports and services that enable students with special needs to demonstrate their competencies in the skills being measured by the assessment.

Accommodations change the way in which the assessment is administered or the way in which the student responds to the various components of the test without altering the essential purpose and content of the assessment or affecting the meaning and validity of the assessment results.

Accommodations used for this assessment must be in the student's IEP and must not be used just for the purposes of this particular assessment. Except for accommodations which alter the setting or the time allowed for the assessment, they are means of accessing written text and graphics and/or of responding to them.

Modifications

The term "modifications" refers to supports and services that differ from accommodations in that they actually alter the meaning of the assessment results by changing the level of difficulty of the assessment. Such supports and services include adaptations/alterations of the assessment content and teacher assistance in the form of clarification or explanation of parts of the assessment.

The nature of the assessment and the conditions imposed on its administration by the standards of practice for large-scale assessments are such that certain strategies which are appropriate in a classroom setting are in fact "modifications" and are not allowable for the purposes of this assessment.

Examples of strategies that are appropriate in a classroom, instructional or assessment context, but are not allowable for the Grade 9 Assessment of Mathematics are clarifying questions for students, encouraging students to question for clarification and additional information, and encouraging oral discussion prior to completing tasks.

In order to ensure that all students have opportunities to familiarize themselves with the assessment and receive clarification and explanation of the types of instructions and questions and of the language and layout of the assessment, EQAO has posted *Support Materials* on its Web site (www.eqao.com). Included are directions to students about responding to multiple-choice questions, short answer items and tasks. Student booklets will also contain a *Key Words and Phrases in Instructions* sheet for students to refer to during the assessment.

Guiding Principles

All Grade 9 students in applied and academic mathematics programs will participate in the Grade 9 Assessment of Mathematics.

Students with special needs must be accommodated.

Adherence to the EQAO policy on accommodations will ensure consistency and fairness across the province and from one year to the next.

Accommodations must not change the nature, content or validity of the assessment.

Procedures for Accommodations

Accommodations must be made for students with special needs. (See definitions on page 8.) Students qualifying for accommodations **may or may not** have been formally identified as exceptional by an Identification, Placement and Review Committee (IPRC).

Decisions about accommodations must

- ❑ always be made on an individual student basis;
- ❑ be made by the principal in consultation with the student, parent/guardian, appropriate staff (including Special Education resource services staff, where appropriate);
- ❑ be made prior to the assessment;
- ❑ take into consideration all accommodations included in the student's IEP that are also listed in this document for use on the test;
- ❑ be clearly communicated to the student and parent/guardian in advance of the writing of the test;
- ❑ have the signed consent of the parent/guardian; and
- ❑ be recorded on the *Student Information Form* provided by EQAO.

Human resources required for the implementation of accommodations:

In some cases, a person may be required to assist with the implementation of accommodations for students with special needs. See Appendix F for direction on the qualifications and roles of individuals assisting with accommodations.

Accommodations for Students with Special Needs

Note: To ensure the integrity of the assessment and the equitable participation of all students, only the accommodations listed below may be provided for students with special needs. In each case, the accommodation provided must be specified in the student's IEP.

In the case where there is an accommodation included in the students IEP that conforms to the definition of "accommodations" on page 8 and that is not included in the following list, a written request for the use of that accommodation may be faxed or e-mailed or mailed to the Chief Assessment Officer of EQAO at

fax: (416) 325-2956
e-mail: Secondary@eqao.com
address: 2 Carlton Street
Suite 1200, Toronto ON M5B 2M9

This would include a request for time beyond double the time allowed for the test.

1. Setting

- ❑ Students may be provided with an individual or small-group setting in a separate location or familiar space.
- ❑ Individual study carrels may be provided.
- ❑ Students may be given preferential seating within the regular classroom.
- ❑ Special lighting may be provided.
- ❑ Assistive devices or adaptive equipment (such as a device to support the student's arm for printing, writing or keyboarding, special pens or pencil grips) may be provided.

2. Timing

- ❑ Additional time for the assessment beyond the time assigned is permitted, but not more than double the time and each component must be completed by the end of each assessment day.
- ❑ Periodic supervised breaks may be provided. The duration of the break will not be deducted from the time allowed for the component on which the student is working.
- ❑ In cases of students with severe attention problems, prompts may be given solely for the purpose of drawing the student's attention back to the assessment. (See Appendix F for direction on the use of prompters.)

3. Presentation and test format

- ❑ When reading from the teacher's administration script, teachers may not change or explain any of the instructions that they read to the students. They may repeat instructions.
- ❑ Teachers must not explain or change the instructions or questions in the student booklets.
- ❑ The assessment may be presented in Braille or large-print versions.
- ❑ The use of American Sign Language or Signed Language or an oral interpreter is permitted for the instructions contained in the teacher's administration script.

- ❑ Verbatim reading of the instructions and questions is permitted.
- ❑ An audiotaped version of the test is permitted for visually impaired students.
- ❑ Coloured overlays and the following colours of paper are permitted and must be indicated on the *School Verification Report*: blue, green or yellow.
- ❑ Assistive devices, such as a Kurzweil reader, those permitting optical-to-tactile transformations and "universally scripted visual components," or other devices specified in the IEP, are permitted. EQAO will provide one single-sided hard copy for scanning when indicated on the *School Verification Report*.
- ❑ An electronic format may be used. A single-sided hard copy will be provided for scanning when requested on the *School Verification Report*.

It will be necessary for principals to indicate on the *School Verification Report*, which will be sent to the schools well in advance of the administration of the test, the number of Braille, large print and audiotaped versions of the test required. This will allow EQAO to supply the required versions of the test and to monitor their use across the province.

See Appendix F for direction on verbatim reading.

4. Response format

- ❑ Provisions may be made for students who require extra space for their responses to the assessment questions and tasks. Their responses may be stapled into the student booklets.
- ❑ The use of the following is permitted:
  - ❑ a Brailler
  - ❑ a speech synthesizer or Bliss board
  - ❑ voice-to-text software such as Dragon Naturally Speaking
  - ❑ augmentative alternative communication
- ❑ When
  - i) the student has a special need that affects written expression and this special need is such that the student cannot translate thoughts into written language even though the student can express thoughts orally, or
  - ii) the student has a special need that affects written output and the time constraint of the on-demand task will inhibit the required product, or
  - iii) the student has a special need that affects small motor control and his/her handwriting is illegible and would be unintelligible for the marker to make an appropriate assessment,

  and the accommodation is included in the student's IEP,

  the student may be accommodated with:

  verbatim scribing of the responses,
  or
  tape recording for later transcription
  or
  a computer or word processor.

See Appendix F for direction on verbatim scribing.

Special Provisions for Students Enrolled in English as a Second Language (ESL)/English Literacy Development (ELD) Programs

Special provisions may be made for students who take part in the Grade 9 Assessment of Mathematics and are enrolled in English as a Second Language (ESL) or English Literacy Development (ELD) programs (ESL, levels 1 to 4; ELD, levels 1 to 4; and Bridge to English – ESL level 5).

Please note: If there is no ESL/ELD program available for a student but he or she would qualify for one of the above-listed programs if one were offered in the school, the student may be given special provisions.

Decision-Making Steps

The decision about any special provisions must be made on an individual basis:

- ❑ Consider each student's situation prior to the administration of the assessment.
- ❑ Ensure consultation takes place with the student, parent, principal, teacher and appropriate staff before deciding if the student is a candidate for special provisions.
- ❑ Contact the parents/guardians to obtain a signed consent.
- ❑ Record all special provisions on the *Student Information Form*.

Special provisions for students in ESL/ELD programs

- ❑ periodic supervised breaks (the duration of the break will not be deducted from the time allowed for the component on which the student is working);
- ❑ additional time for the assessment beyond the time specified, but not more than double the time (each component administered on any day must be completed by the end of that day);
- ❑ verbatim reading of questions; and
- ❑ an individual or small-group setting in a separate location or familiar space, or an individual study carrel.

Exemptions

Students with Special Needs

An exemption may be considered if the full range of permitted accommodations has been considered and it is determined that the student still would not be able to provide evidence of learning under these conditions.

Decision-Making Steps

The decision about any exemption must be made on an individual basis:

- ❑ The teacher, principal and appropriate student services personnel consult with one another and with the parent(s) about the exemption. The parent(s) and student should be informed that the assessment activities are part of the classroom instruction during the period of the assessment.
- ❑ The principal contacts the parent(s) to obtain signed informed consent. If consent is obtained, the principal keeps the signed consent form in the school office. (Do not send it to EQAO.) The exemption is noted on the *Student Information Form* and booklets are marked "not complete" on the *Class Tracking Sheet*.
- ❑ If consent is not obtained, the student participates in the assessment and may be considered for accommodations. All accommodations are recorded on the *Student Information Form*.

Students in ESL/ELD Programs

Students who are taking ESL/ELD courses and have not yet acquired a sufficient level of proficiency in English to complete the assessment, even with special provisions, should be exempted.

Decision-Making Steps

The decision about any exemption must be made on an individual basis.

- ❑ The principal contacts the parent(s) to obtain signed informed consent. If consent is obtained, the principal keeps the signed consent form in the school office. (Do not send it to EQAO.) The exemption is recorded on the *Student Information Form* and booklets are marked "not complete" on the *Class Tracking Sheet*.
- ❑ If consent is not obtained, the student participates in the assessment and may be considered for special provisions. Special provisions are recorded on the *Student Information Form*.

Before the Assessment

Overview

Item	Action	Page(s)	Responsibility		Completed
			Principal	Teacher(s)	
Guide for Principals and Teachers Administering the Grade 9 Assessment of Mathematics	Read		✓	✓	
Accommodations, Special Provisions and Exemptions	Review procedures	8–13, 39	✓	✓	
Letter to parent(s) for accommodations and exemptions (See Appendix A and B)	Send letter to parent(s), where required Obtain parent's signature Keep the letter on file (Do not send to EQAO)	31, 32	✓ ✓		
Class Tracking Sheet	Ensure completion and keep a photo-copy in the office	15, 17	✓		
Student Information Forms	Ensure completion	15, 17	✓		
Packing/Return List	Verify contents of boxes and quantities of materials upon receipt	16	✓		
Prepaid shipping labels	Store for easy retrieval at the end of the assessment	16	✓		
Distribution of assessment materials to teachers	Provide packages to teachers Call EQAO at 1-888-327-7377 if additional copies are required	16			
Receipt of materials by teachers	Verify all materials have been received	16		✓	
Teacher Questionnaire	Complete using a dark pen or pencil	18		✓	
Teacher's Daily Scripts	Review carefully	24–30		✓	
Student Questionnaire	Distribute to each student participating in the assessment the day before the assessment begins Have students complete using a dark pen or pencil	19		✓	
Monitoring the assessment	Develop a process to ensure all required procedures are followed		✓		
Confidentiality Agreement	Sign agreement	16, 33–34	✓	✓	

Preparation for the Assessment

Prior to the receipt of the actual assessment, schools will receive a package for each class. The package will contain a *Class Tracking Sheet* and *Student Information Forms*. A general information letter to parents, accommodation and exemption letters will also be included.

Class Tracking Sheet

A *Class Tracking Sheet* is provided for each class. For classes in which there are both applied and academic students, a separate *Class Tracking Sheet* has been provided for each program. The *Class Tracking Sheet* should be completed following these steps:

- ❑ Use a class list.
- ❑ Account for every student registered in the class.
- ❑ Neatly print each student's name above a *Student Bar-Coded ID Number*.
- ❑ Record all students, even those who will be exempted, on the *Class Tracking Sheet*.

Student Information Form

Complete one *Student Information Form* for each student. These must be completed accurately and in full for every student enrolled in the class and recorded on the *Class Tracking Sheet*.

- ❑ Ensure that the last four bold numbers on the preprinted *Student Bar-Coded ID Number* match the last four bold numbers on the *Student Bar-Coded ID Number* on the *Class Tracking Sheet*.
- ❑ Complete the information in the appropriate sections of the form prior to the assessment.
- ❑ Use a dark pen or pencil to complete the form.

Note: The order of the *Student Bar-Coded ID Numbers* on the *Class Tracking Sheet* is the same order as on the *Student Information Forms* and the packages of student material. This will facilitate completion of the forms and distribution of student packages.

Preparation for the Assessment

Receipt of Assessment Materials by the Principal

A complete package of materials for the assessment will be sent by courier to the principal for distribution to the teacher(s) involved.

- ❑ Ensure that the school secretary and/or custodian are informed about the arrival of these materials.
- ❑ If you receive a partial shipment, wait two days after receiving the first box(es) for the full shipment to arrive.
- ❑ If all materials have not arrived after two days, or if the contents are incomplete, contact EQAO directly at 1-888-327-7377.
- ❑ Check the contents of the materials on arrival.
- ❑ Log all materials received on the *Packing/Return List*, including the quantities of each specific item.
- ❑ Store the box and packing materials for the return of the assessment materials to EQAO.
- ❑ Sign the *Confidentiality Agreement* and have the teacher(s) administering the assessment and non-teaching personnel assisting with accommodations or special provisions sign it as well. Store the *Confidentiality Agreement* with the prepaid shipping labels in preparation for the return of the assessment materials to EQAO after the administration of the assessment.
- ❑ Distribute the package(s) of class sets of material to the teachers administering the assessment.
- ❑ Ensure the completion of the *Student Information Forms*.

Receipt of Assessment Materials by the Teacher(s)

- ❑ Ensure that you have received the correct materials for your class(es).
- ❑ Read the *Guide for Principals and Teachers Administering the Grade 9 Assessment of Mathematics*.
- ❑ Ensure that scientific calculators are available for each student in your class(es).
- ❑ Review the completed *Student Information Forms*.
- ❑ Review the completed *Class Tracking Sheet* to ensure all students are listed.

Preparation for the Assessment

Student Orientation

Student orientation will take approximately 30 min. A script has been included in the *Teacher's Daily Scripts* for this purpose. During orientation, the teacher will provide information on the assessment and each student will complete a *Student Questionnaire*. Administration of the actual assessment will take approximately 170 min. Ideally, it should be administered over consecutive mathematics periods. The assessment **must** be administered in the order that appears on page 4 of this guide.

Students will work independently on all components. Inform the students of materials that will be required (scientific calculators, pens, pencils, erasers, rulers, protractors, and paper for rough work in the multiple-choice section).

Classroom Organization

Students will work independently on the assessment.

Before the assessment, teachers must remove from the walls and display areas in the classroom any mathematics material that is directly instructional in nature (e.g., definitions of mathematical terms). It is not necessary to remove classroom materials that are not directly instructional, such as decorations, posters and student work. The *Key Words and Phrases in Instruction* sheet and the *Formula* sheet may be posted.

Class Tracking Sheet

After the assessment has been completed, the principal is responsible for ensuring that copies of the *Class Tracking Sheet* are kept on file at the school and that the originals are submitted to EQAO.

Student Information Forms

- ❑ Review the forms before and after the assessment to ensure that the forms are accurate and complete.
- ❑ Bundle the original forms and place them in an envelope.
- ❑ Give the envelope with completed forms to the principal.

Student Packages

Each sealed student package contains the following materials:

- ❑ *Student Questionnaire*
- ❑ *Formula Sheet*
- ❑ *Student Answer Sheet*
- ❑ *Booklet 1* (Multiple-Choice)
- ❑ *Booklet 2* (Tasks)
- ❑ *Booklet 3* (Short Answer)
- ❑ *Booklet 4*
- ❑ Envelope

If a student's package is incomplete, replace the incomplete package with one of the extra packages, make appropriate changes on the *Class Tracking Sheet* and complete the *Student Information Form* with the same bar-coded ID number. Mark the original *Student Information Form* "VOID."

Extra packages must not be opened and must be returned to EQAO at the conclusion of the assessment.

Note: If you are planning to mark components for classroom evaluation, use the package of materials with the same bar-coded ID number as identified by "Teacher" on the *Class Tracking Sheet*.

Questionnaires

Teacher Questionnaire

The information from the *Teacher Questionnaire* will provide demographic and contextual information. If you are teaching both applied and academic classes, you are asked to complete one questionnaire for either the academic or applied program (whichever includes the largest number of students).

- ❑ Teachers are asked to complete the questionnaire according to the instructions on the questionnaire.
- ❑ Use a dark pen or pencil to complete the questionnaire.
- ❑ Return the completed questionnaire to the principal.

Teachers who wish confidentiality are asked to submit the questionnaire to the principal in a sealed envelope labelled "Teacher Questionnaire."

Student Questionnaire

Prior to the administration of the assessment, each student who will be participating in the assessment will complete the *Student Questionnaire*. Read the section in the *Teacher's Daily Scripts* entitled "Before the Assessment" to the students.

- ❑ Students must use a dark pen or pencil to complete the questionnaire.
- ❑ Read the instructions in the *Teacher's Daily Scripts*. Emphasize the correct way to fill in the boxes.
- ❑ If required, read the questions to the students, allowing them time to fill in the boxes representing their responses to each item.
- ❑ Include the completed questionnaires with the materials to be returned to the principal for shipment to EQAO.

During the Administration

Overview

Item	Action	Page(s)	Responsibility		Completed
			Principal	Teacher(s)	
Teacher's Daily Scripts	Read the script Ensure materials are prepared (including paper for multiple-choice calculations)	20, 24–30		✓	
Assessment materials	Distribute assessment material to students	21		✓	
Teacher absences	Review the policy	2	✓	✓	
Student absences	Review the policy	3	✓	✓	
Quality Assurance visits	Remember that an EQAO representative may visit your school to monitor the administration of the assessment	3	✓	✓	
Security	Ensure the security and confidentiality of all assessment materials	2	✓	✓	

Teacher's Daily Scripts

The *Teacher's Daily Scripts* provide instructions for administering the assessment. They contain

- ❑ a sequenced set of required procedures with the specified times; and
- ❑ a script to ensure consistency in the administration of each of the assessment components.

As students work through the assessment, they should be encouraged to attempt all of the items. Ensure that materials and activities are available for any student who completes a task before other students.

Note: The sequence of the last four numbers of the *Student Bar-Coded ID Numbers* on the *Class Tracking Sheet* are in the same order as on the *Student Information Forms* and the packages of student material. This will facilitate completion of the forms and distribution of student packages.

Distribution of Student Materials

Use the *Class Tracking Sheet* to distribute student packages. Ensure that the last four numbers on the *Student Bar-Coded ID* on the *Class Tracking Sheet* and on the student packages match. These should also match the last four numbers on the *Student Information Form.*

Administering the Assessment

Once materials have been distributed to the students, read the appropriate sections of the *Teacher's Daily Scripts* to the students.

- ❑ Do not leave the room unattended once materials have been distributed. If an emergency occurs, instruct students to leave materials on their desks and exit the room immediately. When they return, instruct them to return to work.
- ❑ Do not translate or explain terms or questions to the students.
- ❑ Do not influence the students' responses.
- ❑ Do not make corrections on the students' work.
- ❑ At the end of each day's assessment period, collect the envelopes.

After the Administration

Overview

Item	Action	Page(s)	Responsibility		Completed
			Principal	Teacher(s)	
Student Booklets	Organize booklets		✓	✓	
Class Tracking Sheet	Give to principal	15–17		✓	
	Make a copy and store for safekeeping	22, 23	✓		
	Return original to EQAO		✓		
Student Information Forms	Review the forms	17, 22, 23	✓	✓	
	(Copies may be kept on file at the school)		✓		
	Return originals to EQAO		✓		
Packing/Return List	Use to record the total number of booklets and materials being returned	23	✓		
	Make a photocopy and keep on file		✓		
	Return original to EQAO		✓		
Return Materials	Return all materials to EQAO using the prepaid shipping labels	23	✓		
	Institute a trace on the shipment(s), if necessary		✓		

Returning Materials from Teachers to the Principal

All assessment materials (teacher and student) must be given to the principal for return to EQAO. Prepare the student materials in this way:

- ❑ Bundle all unused student packages together.
- ❑ Ensure that a *Student Information Form* is completed for every student listed on the *Class Tracking Sheet*.
- ❑ Put the original *Student Information Forms* and the original *Class Tracking Sheet* in an envelope. Return the envelope to the principal for return to EQAO.
- ❑ Bundle all *Student Questionnaires* together.
- ❑ Bundle all the completed *Booklet 1*'s together and secure the bundle with an elastic. Follow the same procedure for *Booklet 2*, *Booklet 3* and *Booklet 4*.
- ❑ Bundle all *Student Answer Sheets* together and secure with an elastic.
- ❑ Return all materials and booklets used for classroom evaluation of student's work.
- ❑ Return the completed *Teacher Questionnaire*. (This may be placed in an envelope for confidentiality purposes, if desired.)

All materials must be returned to the principal.

Returning Materials from the Principal to EQAO

Once the assessment has been completed in the school, the principal will receive **all** assessment materials from the teacher(s). All materials must be returned to EQAO.

The materials should be prepared by the principal for return to EQAO in this way:

- ❑ Indicate on the *Packing/Return List* the total number of each item being returned to EQAO.
- ❑ Photocopy the *Class Tracking Sheets* and store in the office. Return the originals to EQAO. (EQAO also recommends making copies of all the *Student Information Forms*.)
- ❑ Make a photocopy of the completed *Packing/Return List* and keep the copy in a secure place at the school. (The materials returned must equal those sent to the school.)
- ❑ Include the original *Packing/Return List* in the box with the materials being returned to EQAO.
- ❑ Place all assessment materials and *Student Information Forms* in the tote boxes provided in preparation for return to EQAO. Fill free space in the boxes with original packing materials. Seal all materials as indicated on the Instructions for Returning Materials to EQAO page.
- ❑ Use the prepaid shipping label(s) provided to return the assessment materials to EQAO.

On file in the school there should be

- ❑ a photocopy of the *Class Tracking Sheet* for each class participating in the assessment;
- ❑ signed consent forms for students receiving accommodations;
- ❑ signed consent forms for any student exempted from the assessment;
- ❑ a photocopy of the *Packing/Return List*;
- ❑ a record of the date of the courier pickups; and
- ❑ the courier record.

Thank you for your care in following these procedures and for your role in the administration of the Grade 9 Assessment of Mathematics.

Reporting to Students and Parents

In the fall of 2001, EQAO will provide an *Individual Student Report* for each student who participated in the assessment. The *Individual Student Report* will indicate levels of achievement for mathematics. Samples of student work will be provided to assist teachers in the interpretation and communication of reports. Directors of education for each district school board and school authority will receive board and school reports. EQAO will report on student achievement for the province and for school boards in the *Provincial Report on Achievement* in November 2001.

Teacher's Daily Scripts

Before the Assessment

Read the following to your class at least one day before the assessment. This time period provides an opportunity to give general information about the assessment and to have students complete the Student Questionnaire.

- ❑ The Grade 9 Assessment of Mathematics will take place during your math classes on _____, 2001.
- ❑ (*Optional:* Some components will be used for your class or final exam mark.)
- ❑ All components will be marked and results will be reported to you and your parents.
- ❑ It is important that you do your best on the assessment.
- ❑ You will need to bring some supplies to class on the days of the assessment. They include
  - ❑ sharpened pencils and/or pens;
  - ❑ an eraser;
  - ❑ a scientific calculator or, if you have one, a graphing calculator (you must have at least a scientific calculator);
  - ❑ a ruler; and
  - ❑ a protractor.
- ❑ Bring a book with you to class to read on the days of the assessment in case you finish before the specified time.

Distribute the packages to the students. Ensure that the Student Bar-Coded ID Number *on the package matches the number assigned to the students on the* Class Tracking Sheet.

- ❑ Open your packages.
- ❑ In your package, you should have the following items:
  - ❑ a Student Questionnaire;
  - ❑ a Student Answer Sheet;
  - ❑ a Formula Sheet;
  - ❑ Booklet 1;
  - ❑ Booklet 2;
  - ❑ Booklet 3;
  - ❑ Booklet 4; (Note, only some students will have a Booklet 4, which contains multiple-choice questions. Only those students will receive a multiple-choice answer sheet for Booklet 4. The last four digits on the answer sheet should match the last four bar-coded digits on that Booklet 4.)

❑ an envelope

❑ Check to ensure that the last four digits are the same.

Let me know if you are missing any items.

(If a student is missing an item, provide the student with a completely new package and make the appropriate change(s) on the Student Information Form *and the* Class Tracking Sheet.*)*

❑ Find your copy of the *Student Questionnaire*. This is the only document we will be working on today.

❑ Put the remaining material in the envelope and place your name on the outside of the envelope.

Read the introduction and directions to the students.

We would like to know a little about your background so that we can see how students with different experiences do on this mathematics assessment. Do not sign or put your name on this questionnaire. Your responses will remain completely confidential. We will only report results for categories of students, for example, female and male. Please read each question carefully. You may ask for help from your teacher to complete this questionnaire. This questionnaire will take 10 min to 15 min to complete. If no answer seems exactly right, just fill in the "box" for the one that is closest to what you want to say. Please use a dark pen or pencil. Thank you.

Please fill in the "box" that best describes your response.
Do not use check marks or Xs.

Assist them in completing the questionnaire. Collect the questionnaires when students have completed them.

Collect the envelopes and store in a secure location.

Part I: The first assessment period

Distribute the student envelopes.
Today we are starting the first part of the Grade 9 Assessment of Mathematics. It is important that you do your best work. Since this is an assessment, I cannot help you understand the questions.
You can use your scientific calculator for all parts. If you have a graphing calculator, you may use it.

Booklet 1 (Multiple-Choice Questions) (30 min)

Turn to *Booklet 1* and the *Student Answer Sheet.*
Today you will be working on multiple-choice questions.
(Read aloud Directions to Students about Answering Multiple-Choice Questions.*) Ask students to open their booklets to the first page and follow along as you read the "Directions to Students."*
Mark all answers on the *Student Answer Sheet.*
Use an HB pencil when answering questions.
Use your scientific calculator or your graphing calculator, if you have one.
You may use the *Formula Sheet* to assist you.

You will have 30 min to complete the questions.
When you see the "STOP" sign, you have completed the multiple-choice section. Check your answers. Then wait quietly for directions from your teacher.

After 30 min:

Stop working.
Close your booklet.

Collect the Student Answer Sheets *and* Booklet 1.
(If you are stopping for the day, ask students to place all materials into their envelopes. Collect the envelopes and store in a secure location.)

Part II

Distribute the student envelopes, if necessary.

Booklet 2 (Tasks — Part I) (40 min)

Take out *Booklet 2.*
You will now be working on extended-response Tasks 1, 2 and 3.
(Read aloud Directions to Students about Answering Tasks.*)*
Show all of your work and include words, numbers, graphs, diagrams, symbols, charts and/or pictures to explain your thinking.
Use the *Key Words and Phrases in Instructions Sheet* in the front of your booklet as a guide.

(Read the Key Words and Phrases in Instructions Sheet *aloud to your students.)*
You may use the *Formula Sheet* to assist you.
You will have 40 min to complete these three tasks.
When using your scientific calculator, or your graphing calculator, write down the numbers and the operations buttons that you push.
Do not work past the stop sign.

After 40 min:

Stop working.
Close your booklet and place it in your envelope.
Make sure all assessment materials are in your envelope.

Collect the envelopes and store in a secure location.

Part III

Distribute student envelopes.

Booklet 3 (Short Answer Items) (30 min)

Today we will begin working on the short answer items that are located in *Booklet 3.*
They require you to think but they do not require a long answer.
You may use your scientific calculator or your graphing calculator.
(Read aloud Directions to Students about Answering Short Answer Items.*)*
You will have 30 minutes to complete the items.
Refer to the *Key Words and Phrases in Instructions Sheet* and the *Formula Sheet* to assist you.
Open your booklet and begin to work.

After 30 min:

Stop working.
Close your booklet.

Collect the booklets.
If you are stopping for the day, please ask students to place all materials into their envelopes. Collect the envelopes and store in a secure location.

Part IV

Distribute the student envelopes, if necessary.
Booklet 2 (Tasks — Part II) (40 min)

Please take out *Booklet 2.*
You will now work on extended-response Tasks 4, 5 and 6.
(Review the directions for answering tasks with the students.)
Show all of your work and include words, numbers, graphs, diagrams, symbols, charts and/or pictures to explain your thinking.
Remember to refer to the *Key Words and Phrases in Instructions Sheet* and your *Formula Sheet.*
When using your scientific calculator or your graphing calculator, write down the numbers and the operations buttons that you push.
You will have 40 min to complete these three tasks.

After 40 min:

Stop working.
Close your booklet.
Place all of your materials in your envelope.

Collect the booklets.

Part V

Booklet 4 (30 min)

Distribute the envelopes.
Note: The contents of Booklet 4 *may vary from student to student. There are several versions of this booklet being administered in this component of the assessment. Booklets will contain multiple-choice questions, short answer questions or tasks. Only students receiving a* Booklet 4 *of multiple-choice questions will receive a multiple-choice answer sheet for this booklet. The last four bar-coded digits on a student's* Booklet 4 *materials should match the last four bar-coded digits beside that student's name on the* Class Tracking Sheet.
Today we will be working on the last component of the assessment.
Take out *Booklet 4*.
Refer to the *Key Words and Phrases in Instructions Sheet* and your *Formula Sheet* to assist you in answering the questions.
You have 30 min to complete this booklet.

After 30 min:

Stop working.
You have now completed the assessment.
(*Optional:* I will be reviewing your work on this assessment and will be using some components for your mark for the course.)
EQAO will provide an *Individual Student Report* to you and your parents in the fall.

Collect the booklets and the Formula Sheets.
The envelopes can now be reused or recycled.

Appendices

Appendix A

Sample Accommodations Letter

Appendix B

Sample Exemption Letter

Appendix C

Confidentiality Agreement

Appendix D

Key Words and Phrases in Instructions

Appendix E

Formula Sheet

Appendix F

Human Resources Required for the Implementation of Accommodations for Students with Special Needs

Appendix G

Glossaire de termes Mathématiques: Anglais à Français – 9^{e} année

Appendix A

Sample Letter to Parent/Guardian — "Accommodated Student"

(SCHOOL LETTERHEAD)

(Date)

Dear Parent/Guardian:

Between _____ and _____ students in Grade 9 applied and academic mathematics courses will be participating in the province-wide Grade 9 Assessment of Mathematics.

We recommend that your son or daughter receive the following accommodation(s), based on the Education Quality and Accountability's policy on accommodations:

- ❑ An individual or small-group setting in a separate location or familiar space, an individual study carrel, special lighting or adaptive equipment
- ❑ Additional time for the test beyond the time assigned, but no more than double the time
- ❑ Periodic supervised breaks
- ❑ Prompts for the purpose of drawing the student's attention back to the test
- ❑ Braille version of the test
- ❑ Large-print version of the test
- ❑ Electronic version of the test
- ❑ American Sign Language or Signed Language or an oral interpreter
- ❑ Assistive devices and technology resources, such as a Kurzweil reader, a speech synthesizer, a Bliss board, a Brailler, voice-to-text software
  Specify: _____
- ❑ Augmentative alternative communication
- ❑ Audiotaped version of the test
- ❑ Audiotaped response of the test
- ❑ Verbatim scribing of responses
- ❑ Use of computer or word processor for responses
- ❑ Verbatim reading of instructions and questions or tasks
- ❑ Other: _____

If you agree with this recommendation, please sign the consent form below and return it to the school by (*date*). Please contact the principal of the school if you have any questions or concerns about this recommendation.

(*Principal's Signature*)

Name of Student: _____
(*Print Name*)

I (We), _____, consent to the accommodation(s) indicated above for our son/daughter on the Grade 9 Assessment of Mathematics.

Father, Mother, Guardian(s)_____
(*Signature*)

Appendix B

Sample Letter to Parent(s) Recommending an Exemption

(on school letterhead)

Dear Parent/Guardian:

Between _____ and _____ students in Grade 9 applied and academic mathematics courses will be participating in the province-wide Grade 9 Assessment of Mathematics.

We recommend that your son or daughter receive an exemption from the assessment. This would mean that your son/daughter .....
(*Identify the alternative activities that will be offered.*)

We are recommending this exemption for the following reason(s):
(*Please give the reason(s) for which the school is recommending exemption. Refer to the section on Exemptions in the* Guide for Principals and Teachers Administering the Grade 9 Assessment of Mathematics.)

If you agree that your son/daughter should be exempted, please sign the consent form below and return it to the school by (*date*). Please contact the principal of the school if you have any questions.

.....

Name of Student : _____

I (we) _____
authorize the school to exempt my/our son/daughter from the Grade 9 Assessment of Mathematics.

Signature(s) of Parent(s) or Guardian(s)

_____

_____

Appendix C

Confidentiality Agreement

ACTIVITY: Administration of Grade 9 Assessment of Mathematics

Name of Board: _____

Name of School: _____

School Address: _____

_____

School Telephone Number: (____) _____ Fax Number: (____) _____

I agree that all information obtained through the administration of the Grade 9 Assessment of Mathematics related to the content of the assessment, student identification through the bar code system and student information regarding accommodations, special provisions or exemptions shall be considered strictly confidential before, during and after the Grade 9 Assessment of Mathematics.

I shall not comment on, use or divulge any such confidential information in any form without prior written consent of EQAO.

I agree to

- ❑ return to all the materials obtained from EQAO in connection with the Grade 9 Assessment of Mathematics; and
- ❑ keep the assessment materials secure, i.e., I will not copy or show them to anyone nor discuss them with anyone not involved in the administration of the assessment.

I have read the *Confidentiality Agreement* and agree to its conditions.

Principal:

Signature: _____ Date: _____

Teachers(s) Administering the Grade 9 Assessment of Mathematics:

_____ _____

SIGNATURE DATE

_____ _____

SIGNATURE DATE

_____ _____

SIGNATURE DATE

_____ _____

SIGNATURE DATE

Non-teaching personnel supporting the implementation of accommodations for the assessment:

_____	_____
SIGNATURE	DATE
_____	_____
SIGNATURE	DATE
_____	_____
SIGNATURE	DATE
_____	_____
SIGNATURE	DATE

Support staff helping to organize materials for the assessment:

_____	_____
SIGNATURE	DATE
_____	_____
SIGNATURE	DATE
_____	_____
SIGNATURE	DATE
_____	_____
SIGNATURE	DATE

If you require more space for signatures, please photocopy this form.

EQAO
Education Quality and Accountability Office

Appendix D

Key Words and Phrases in Instructions

Throughout the assessment, key words and phrases are used to identify the type of response required from you. The key words and their explanations are listed below. Refer to these explanations to ensure you are responding to the question that is asked.

Compare:
Tell what is the same and what is different.

Describe:
Tell about something in a step-by-step manner. Use words, numbers, graphs, diagrams, symbols, charts and/or pictures to do this.

Explain:
Use words and symbols to make your solutions clear and understandable.

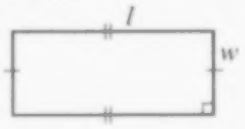
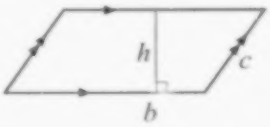
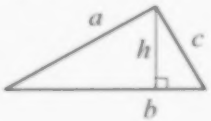
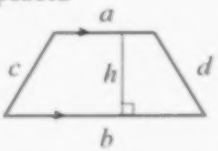
Give reasons for your answer:
Explain your reasoning in your own words. Give reasons and evidence to show your answer is correct or proper.

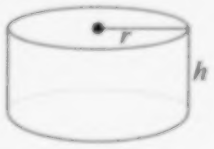
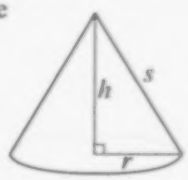
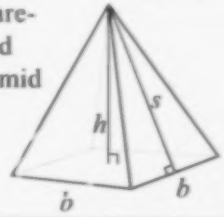
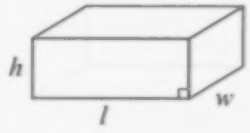
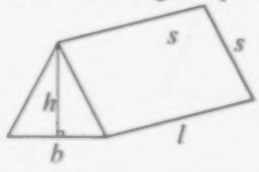
List:
Write down or identify in point form.

Show your work:
Record all calculations. Include all the steps you went through to get your answer. For some questions, you may want to use words, graphs, diagrams, symbols, charts and/or pictures to explain your thinking.

Appendix E

Formulas

Geometric Figure	Perimeter	Area/Surface Area
Rectangle 	$P = 2l + 2w$ $P = 2(l + w)$	$A = lw$
Parallelogram 	$P = b + b + c + c$ $P = 2b + 2c$	$A = bh$
Triangle 	$P = a + b + c$	$A = \frac{bh}{2}$ **or** $A = \frac{1}{2}bh$
Trapezoid 	$P = a + b + c + d$	$A = \frac{(a + b)h}{2}$ **or** $A = \frac{1}{2}(a + b)h$
Circle	$C = \pi d$ **or** $C = 2\pi r$	$A = \pi r^2$

Geometric Figure	Area/Surface Area	Volume
Cylinder 	$A_{top} = \pi r^2$ $A_{base} = \pi r^2$ $A_{side} = 2\pi rh$ $A_{total} = 2\pi r^2 + 2\pi rh$	$V = \pi r^2 h$
Sphere	$A = 4\pi r^2$	$V = \frac{4}{3}\pi r^3$
Cone 	$A_{cone} = \pi rs$ $A_{base} = \pi r^2$ $A_{total} = A_{cone} + A_{base}$	$V = \frac{1}{3}\pi r^2 h$
Square-based pyramid 	$A_{triangle} = \frac{1}{2}bs$ *(for each triangle)* $A_{base} = b^2$ $A_{total} = A_{4\ triangles} + A_{base}$	$V = \frac{1}{3}b^2 h$
Rectangular prism 	$A_{total} = wh + wh + lw + lw + lh + lh$ $A = 2(wh + lw + lh)$	$V = lwh$
Isosceles triangular prism 	$A_{triangle} = \frac{1}{2}bh$ *(for each triangle)* $A_{rectangles} = ls + lb + ls$ $A_{total} = A_{rectangles} + A_{2\ triangles}$	$V = \frac{1}{2}(bh)l$

Appendix F

Human Resources Required for the Implementation of Accommodations for Students with Special Needs

Any person who is engaged to assist with the accommodations of one or more students and who is not a teacher must work under the direct supervision of a teacher or the principal. Only adult persons who are not relatives of students writing the test and who are not themselves students in the school may provide assistance in these circumstances. It is important that such individuals be given training and that the guidelines below be followed.

- ❑ The role of individuals who assist with the implementation of accommodations for students with special needs is to ensure that the student is properly supervised during the administration of the test and that the accommodations are appropriately implemented.
- ❑ These individuals shall not provide students with any assistance that would compromise the validity of the test; that is, they shall not provide assistance that helps students to understand the questions or to formulate their answers, or give any instructions or suggestions (for example, suggestions about pacing their work) not given to all students writing the test.
- ❑ It is generally a good idea if the person who assists with the implementation of accommodations is known to the student. However, as noted above, the person must not be a relative.
- ❑ All non-teaching personnel providing assistance with the implementation of accommodations will be required to sign a *Confidentiality Agreement* and will be required to adhere to the same security provisions and other guidelines for the administration of the Grade 9 Assessment of Mathematics as the teachers and principals involved in its administration.

Scribes:

- ❑ The role of the scribe is to write and draw, where necessary — by hand or using a typewriter or computer — the student's dictated answers to questions and to follow the student's instructions for the drawing of graphs or diagrams. The scribe must not in any way help the student to formulate answers to the questions. In the course of the assessment, the scribe:
  - must not give any assistance or suggestions related to the content of the assessment;
  - must not give advice related to the order of the questions or the time to be spent on them;
  - must write, by hand or using a typewriter or computer, the student's answers and follow instructions for the drawing of graphs or diagrams exactly as they are dictated by the student; and
  - may read back what has been recorded at the student's request.

Verbatim Readers:

- ❑ The role of the verbatim reader is to read the instructions and questions exactly as they appear in the student booklets. The reader must not give any assistance or suggestions related to the content of the assessment, the order of the questions or the time to be spent on them. The verbatim reader may repeat the instructions and questions.

Transcription of tape recorded or brailled student responses:

- ❑ EQAO will arrange for the transcription of tape recorded or brailled student responses.

Prompters:

- ❑ Prompters are allowed for students with severe attention difficulties. Since the sole purpose of the prompts is to draw the distracted student's attention back to the assessment, prompts are considered process-related aids that do not affect the integrity or validity of the student's performance. The student's attention may be drawn back to the assessment through a pre-arranged signal such as a tap on the student's arm or shoulder or on the desk or through a verbal cue. The prompter may not draw the attention of the student to a specific part of the student booklet. The prompter's role is to observe the student's behaviour, not to observe the quality or pace of the student's work.

Appendix G

Glossaire de termes Mathématiques: Anglais à Français – 9e année

A

accurately . . . précisément
actual cost . . . coût réel
acute angle . . . angle aigu
algorithm . . . algorithme
angle . . . angle
approximate . . . approximatif(ve)
area . . . aire
average . . . moyenne
axes . . . axes

B

bar graph . . . diagramme à bandes
base (of a polygon) . . . base (d'un polygone)
binomial . . . binôme
bisector . . . bissectrice

C

calculate . . . calculer
calculator . . . calculatrice
capacity . . . capacité
central tendency . . . tendance centrale
centre (of a circle) . . . centre (d'un cercle)
chart . . . tableau
chord . . . corde d'un arc
circle . . . cercle
circle graph . . . diagramme circulaire
circumference . . . circonférence
classify . . . classer, classifier
common denominator . . . dénominateur commun
compare . . . comparer
compass . . . compas
concentric . . . concentrique
congruent . . . congru
congruent figures . . . figures congrues
construction . . . construction
conversion . . . conversion
coordinates . . . coordonnées
cost . . . coût
counter-clockwise . . . sens contraire des aiguilles d'une horloge
curve . . . courbe
cylinder . . . cylindre

D

data . . . données
decimal . . . décimal
decrease (v) . . . diminuer
degree (of an angle) . . . degré (d'un angle)
depth . . . profondeur
describe . . . décrire
diagonal (of a polygon) . . . diagonale (d'un polygone)
diameter . . . diamètre
digit . . . chiffre
dilation . . . dilatation
dimension . . . dimension
direct comparison . . . comparaison directe
discount . . . rabais
draw . . . tracer
dynamic geometry software . . . logiciel de géométrie dynamique

E

edge . . . arête
end point . . . extrémité
equal . . . égal
equation . . . équation
equilateral triangle . . . triangle équilatéral
equivalent . . . équivalent
estimate (v) . . . estimer, évaluer, juger
even number . . . nombre pair
expand . . . développer
exponent . . . exposant
expression . . . expression
extrapolate . . . extrapoler

F

face . . . face
face (of a solid) . . . face ou côté (d'un solide)
formula . . . formule

G

generalize . . . généraliser
geometric shapes and solids . . . formes géométriques et solides
graph . . . graphique
graphing calculator . . . calculatrice à affichage graphique
greater than . . . plus grand que (>)
grid . . . grille

H

height . . . hauteur (d'un polygone)
hexagon . . . hexagone
hypothesis . . . hypothèse

I

increase (v) . . . augmenter
inequality . . . inégalité
infer . . . déduire, conclure, inférer
integer . . . entier relatif
interpolate . . . interpoler, intercaler
interpret . . . interpréter
intersecting lines . . . droites d'intersection
intersection . . . intersection
investigate . . . explorer
isosceles triangle . . . triangle isocèle

K

kite . . . cerf-volant

L

label . . . identifier, étiqueter
less than . . . plus petit que (<)
line . . . droite
line graph . . . diagramme à ligne brisée
line of best fit . . . droite la mieux ajustée
line of symmetry . . . axe de symétrie
line segment . . . segment de droite
line symmetry . . . axe de symétrie
linear . . . affine
list (v) . . . énumérer

M

mass . . . masse
maximize . . . maximiser

mean	moyenne
measurement, measure (n)	dimension, mesure
median	médiane
minimize	minimiser
mode	mode
model (n)	modèle
model (v)	modéliser
motion detector	détecteur de mouvement

N

natural numbers	nombres naturels
negative	négatif
non-linear	non affine
number line	droite numérique

O

observe	observer
obtuse angle	angle obtus
octagon	octogone
opposite integers	entiers opposés
order of operations	ordre des opérations
organize	organiser
origin	origine
overlap (n)	chevauchement

P

parallel lines	droites parallèles
parallelogram	parallélogramme
pattern	suite
per cent	pour cent
perimeter	périmètre
perpendicular	perpendiculaire
plane (as in "plane shapes")	plane (comme dans « figures planes »)
plot	représenter graphiquement
polygon	polygone
polynomial	polynôme
power	puissance
predict	prédire
prism	prisme
probe	sonde
problem solving	résolution de problèmes
properties	caractéristiques
protractor	rapporteur
pyramid	pyramide

Q

quadrant	quadrant
quadrilateral	quadrilatère

R

radius	rayon
range	écart ou variation
rate	taux
ratio	proportion, rapport
rational numbers	nombres rationnels
real numbers	nombres réels
reduce	réduire
regular polygon	polygone régulier
relation	relation
relationship	relation
remainder	reste
rhombus	losange
right angle	angle droit
rise	élévation
rotational symmetry	symétrie par rotation
rounded number	nombre arrondi
run (n)	course

S

sales tax	taxe de vente
sample	échantillon
scale	échelle
scale drawing	dessin à l'échelle
scalene triangle	triangle scalène
scatter plot	nuage de points
scientific notation	notation scientifique
screen capture	affichage d'écran
sequence (v, n)	faire une série, une suite
set	ensemble
shape	forme
sides	côtés
significant digits	chiffres significatifs
similar figures	figures semblables
simplest form	sous sa forme la plus simple
simple fraction	fraction irréductible
simplify	simplifier
slope	pente
sketch (v)	dessiner
solid	solide
sort	classer, trier
sphere	sphère
spreadsheet	tableur
square	carré
square units	unités carrées
stack (v)	empiler
steps	étapes
straight angle	angle plat
straight-edged	arête
sum	somme
surface area	aire
survey	sondage
symbol	symbole
symmetric shape	figure symétrique
symmetry	symétrie

T

table of values	tableau de valeurs
tally chart	tableau des effectifs
tens	dizaines
tesselation	dallage
thousands	milliers
trapezoid	trapèze
triangle	triangle
two-dimensional	à deux dimensions

U

undefined	indéfini
uneven number	nombre impair
units	unités

V

variable	variable
vary	varier
vertex	sommet
vertices	sommets
volume	volume

W

whole number	nombre entier
width	largeur

X

x-intercept	abscisse à l'origine

Y

y-intercept	ordonnée à l'origine

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